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Illness and disease in Roman Crete

Abstract

Nothing is more mobile than microbes. Four categories of evidence are examined for what they can tell us but also for the limitations of the evidence and continuing scholarly debate. This first part of this paper examines the evidence that would indicate that all of the major plagues during the Roman Empire seem to have missed Crete. This in spite of the fact that mobility of populations in the first centuries of the Roman Empire meant that contagions were portable before late imperial laws tied people to their lands and professions. The second part of the paper examines evidence for death by trauma, for which the two greatest categories of evidence are earthquake and violence related to the rise of Christianity.

Illness and cures looks principally at epigraphy and centres on the cult of Aesculapius. The evidence at Lebena is not as detailed as one might wish, and evidence at other sites, such as Lissos, would argue a civic role of Aesculapius that rose in importance, certainly visibility, as the Empire continued. Last, skeletal remains from several sites are examined for what information they have about diet and shortened life expectancy as a result of diet and persistent repeated physical activity.

Keywords: pathology, plagues, climate change, earthquakes, military diplomata, aridity, skeletal analysis, diet, Ayioi Deka, Justinianic Plague, St. Cyprian's Plague, Aesculapius, trauma

To start with the conclusion: with one exception there is little to link results of research by physical anthropologists to known historical events on Crete during the Roman Empire. Even more disappointing, there is little work of physical anthropologists for the Roman period on Crete to suggest that there are important cataclysms or major shifts that the skeletal remains can prove but are unattested or unsuspected in other evidence available to us.[*] In this regard, geophysical and ecological work, such as by Moody in Francis and Kouremenos (2016), is adding more to what can be wrung from the archaeological data and even more scant historical indications.

We know so much less than we should like about how people lived in Crete during the Roman Empire. For the Roman Empire there is not a unique and instantly recognizable object, such as, for example, the Hellenistic *hadra*, that informs us immediately and definitively of an entire sphere of activity. The *hadra* is not just an object: its restriction to Cretan mercenaries is backed

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up and elaborated in inscriptions and literary texts, such as Plutarch's Hellenistic *Lives*. The military culture that the *hadra* suggests is supported also by persistent inter-*polis* conflicts on Crete for which remains, like the Ptolemaic-funded Hellenistic walls at Gortyn, show the fear of imminent attack and also foreign patronage and interference in Crete,[1] significantly contributing cash and jobs to the local economy. For the Roman Empire, the amount of evidence and our understanding of it continues to increase dramatically but without a bellwether or signature class of object that ties everything together. Harris (1999: 353) remains in large part right that Roman Crete is a "morass of facts that still waits its Braudel to make sense of them".[2]

Plagues

The globalization of Sweetman and the "social and economic networks" of Bowsky demonstrate integration, if piecemeal, into the larger Roman economy yet they still cannot allow us to pin-point the extent to which individuals in villages prospered and by what per centage and in what specific ways Cretan amphora finds in Pompeii and in Monte Testaccio at Rome, for example, contributed to an increased quality of life.[3] Even less is known about death and disease. Crete is largely absent from the main disasters known during the Empire: conservative estimates for the Antonine Plague (c. AD 165 - c. AD 180) hover around 5 million people, or around 30% of the population. Galen was a witness and left an account of his visit to a Roman army camp at Aquileia.[4] Not a single death on Crete or skeletal remain can be directly linked to this event.

If the Antonine Plague killed Verus, co-emperor to Marcus Aurelius, St. Cyprian's Plague (AD 251 - post-AD 270) took the life of emperor Claudius II Gothicus. Pontius, a contemporary of Cyprian and his biographer, recorded his observations of the plague in his native Carthage and claimed 5000 deaths a day at Rome. Cyprian's sermon *De Mortatlitate* ("On the Plague")[5] makes the claim that it exceeded the Antonine Plague and places the blame squarely on continued paganism. In Crete, no deaths, either directly or indirectly, have been or can be attributed to the plague. Cyprian lived and wrote at the time of the martyrdom of the Ayioi Deka at Gortyn (December AD 250) and one suspects if he could have linked their *condemnatio ad bestias* to the persecutions of Decius (AD 250 - AD 251) and Valerian (AD 257 - AD 260), or more broadly to the plague, he would have.[6]

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1 Ptolemaic financing of the harbour at Phalasarna is documented, but more importantly the walls at Gortyn; Allegro and Ricciardi (1999) and Coutsinas (2013).

2 In A. Chaniotis (ed.), *From Minoan Farmers to Roman Traders*. Alcock, in the same volume (175-180), in her review of resources, regions, and research strategies for Hellenistic and Roman Crete unintentionally underlines the truth of Harris.

3 Both in Glowacki and Vogeikoff-Brogan (ed., 2011). On the limits and opportunities of survey archaeology, see Gkiasta (2008).

4 Accounts also survive in Diodorus Siculus 5.66.32 and Amminanus Marcellinus book 14; the former estimates 3000 deaths per day in the city of Rome.

5 One should consult as well his essay *De Lapsis* and the letters (Epp. 5-43) he wrote while in hiding.

6 Other contemporary accounts include XIII Sibylline Oracle and Eusebius, *Historia Ecclesiae* 6. 40 and 6. 41 quoting correspondence from Dionysius, bishop of Alexandria, on the plague. Arnobius, writing during the reign of Constantine, does assert that the plague was punishment that Christianity had not yet been fully embraced. Decius' decree mandating sacrifice (AD 249) for his health and safety of the Empire pre-dates the plague as do also the first of the persecutions; see, esp., Rives (1999).

Two other plagues are of great importance: the first is the Great Plague under Justinian (AD 541 - AD 542) which has been linked to *Yersinia pestis*, that is, the bubonic plague pathogen and leaves skeletal markers that have been identified through DNA. Observed by Procopius at Pelusium in Egypt (*History of the Persian War 2.* 22-23),[7] it struck Sassanian possessions as greatly as Justinian's Eastern provinces. Evagrius recorded his impression of the plague in Antioch (*Historia Ecclesiae 4. 29*). Given the devastation of the plague and the ability to trace *necrosis* on skeletal remains, it is significant that not one victim of the plague has been identified on Crete.

The one plague in whose aftermath one can prove a Cretan victim is that of St. Andrew of Crete (feast day 17 October) who was executed as an iconodule in AD 766/767. When the icons did not prevent the second most massive eruption of Thera (AD 726) in antiquity, Leo III was convinced to pass a series of iconoclast edicts (AD 726 - AD 729).[8] The edicts do not seem to have been enforced until the plague of AD 746 - AD 747 (with lesser visitations AD 749 - AD 750). In light of the reappearance of *Yersinia pestis*,[9] Constantine V published a series of investigations (*Πεύσεις*, AD 750) that led to a general synod in AD 754. Andrew of Crete was caught up in the last fervent administrations of the strictures of the synod.[10]

It is dangerous to speculate why and how Crete was spared so often. In the aftermath of the earthquake of AD 710 and the Thera eruption of AD 726, Leo III repopulated Constantinople by emptying several small islands. This presumes that there was official recognition that islands fared better against plagues. As an island, Crete was the preferred shelter for Septimius Severus, escaping the plague-ravaged army of Marcus Aurelius (*Historia augusta: life of Septimius Severus*). Tantalizingly, there are no known *diplomata* of Cretans serving in either the imperial Roman army or navy. It could be plagues did not come to Crete because demobbed veterans did not bring it home, as later returning WWI veterans spread the influenza epidemic.

Trauma

SUNRISE, SUNDAY, 21 AUGUST AD 365: the precision of the date is from Ammianus Marcellinus 26. 10. 15-19 and the *Chronikon Paschale*.[11] The earthquake, estimated at 8.5+,[12] was felt in Sicily and Malta, Cyprus and the Cyrenaica, and the tsunami caused the Nile to flow backwards about 3 kilometers, leaving boats on roof tops. It is the one imperial natural phenomenon in Crete for which there is physical, philological, and forensic evidence. The destruction of Alexandria

7 The length of the II Persian War (AD 540-AD 562) is incredible given the extent of loss of life due to the plague. Assumed to have started in China, current estimates place loss of life as high as 50 million, or 13% of estimated world population. Whatever the actual tally the eastern Byzantine Empire and Sassanid Empire seem to have suffered the most.

8 On iconoclasm under Leo III (717-741) and Constantine V (741-775), see Brubaker (2010) 328-337 but esp. 328-331..

9 Confusingly also described as Pasteurella *pestis;* see Turner (1990, 419, 422) who is also the best source for the politics of the plague and iconoclasm.

10 An odd by-product of the execution of Andrew was the removal of the religious administration of Crete from the bishop of Rome (Pope Paul I).

11 Confirmed by coins found in destruction deposits in Kissamos and Eleutherna; Stiros, Papageorgiou and Markoulaki (2004),434-439.

12 Stathis (2010).

was so severe that more than 200 years after the event there was still a commemoration on its anniversary.[13] Written sources[14] are supplemented by a coin hoard at Knossos,[15] apparently buried by someone in a panic after the earthquake. Several houses in Kissamos have also yielded skeletons crushed in the collapse – one holds a ceramic vessel containing a hoard of coins, the most recent of which dates to AD 364.[16] Skeletons in stratified excavation are also recorded at Gortyn and Eleutherna, also crushed by house fall.[17] Geomorphological examination of new beach rock and tidal notches in western Crete, as well comparative cluster dating of raised features at Phalasarna (fish tank), Matala (ship-shed), neutral features such as the fish breeding tanks at Stalos, and submerged Roman features at Pseira, Mochlos, and Siteia confirm a date for the fracturing of the west and east halves of Crete shortly after AD 365.[18]

The western-uplift/eastern-subsidence on Crete, easily the most visual event on the island, would have been set in motion by this earthquake, as indicated by two tsunami deposits in western Crete.[19] A series of severe, if lesser, earthquakes after AD 365 and before AD 375 are probably to be connected with the uplift.[20] One wonders whether the spike in aridity in Crete during the middle Roman Empire might possibly have exacerbated the severity of the earthquake.[21] It remains the cataclysm, from which the island never recovered, as shown by abandonment of structures and widespread squatters such as at Gortyn[22] and Kissamos,[23] and a decline of population indication by contraction of settlements and decline of new construction.[24] Any changes in diet as a result of changes in resources in the landscape, which have been done for Hierapolis and Pergamon in Turkey,[25] are not available on current examination of skeletons.

Other than the earthquake of AD 365, there is little evidence of death by trauma in Crete during the Roman Empire. The *pax romana* decreased the number of wars and conflicts, intra-island or beyond, nor is there any record either in skeletons or *stelai* of death by accident or

13 Two years after the assassination of Julian, Libanius saw the earthquake as divine revenge from the pagan god while Sozomenos considered it as vengeance that there were still unconverted pagans.

14 Papadimitriou and Karakostas (2008) 296-297. See also, in general, 3D modeling of earthquakes in Hinzen (*et al.*), 2011.

15 Stiros (2010) 58, citing Sidiropoulos (2004) 217-219.

16 Stiros, Papageorgious and Markoulaki (2004) 434-437, and, esp., Markoulaki (2009) 350-352.

17 Kissamos: Stiros (2010), Stiros, Papageorgiou and Markoulaki (2004), Stiros and Papageorgiou (2001); Gortyn: DiVita (1996), DiVita (1995); Eleutherna (House 1): Themelis (2009) 64-71, Themelis (2004) 57-64.

18 Mourtzas, Kolaiti, and Anzidei (2015), esp. pp. 10 and 25 (date), 12 (Mochlos and Pseira), 13 (Matala and Stalos), and 20 (Phalasarna).

19 Important initial gathering of the evidence has been done by Pirrazoli which is incorporated into Papadimitriou and Karakostas (2008).

20 Stiros, Papageorgiou and Markoulaki (2004: 434) list the earthquakes known between AD 355 and AD 375, a particularly active period.

21 On aridity in Crete during the Roman Empire, see Moody (2014) and (2016).

22 See, esp., Di Vita (2010).

23 See, esp., Markoulaki (2009) 337-380.

24 The period after the earthquake, however, is the one to which the majority of mosaics in Crete must be dated, many are part of refurbishment of existing structures; see, esp. Sweetman (2013) 153-171 but primarily Markoulaki (1990) 449-463.

25 Hierapolis: Wong (*et al.*) (2017) 228-236; Pergamon: Propstmeier (*et al.*) (2017) 237-249.

misadventure. In spite of the number of Jewish communities, there is no evidence that the Cyrene revolt spread to Crete.[26] It is easily over-looked that the governor responsible for Cyrene at the time of its revolt was based in Gortyn as governor of *Creta et Cyrenaica*. Dio Cassius (5. 66 § 32) gives a combined total of Greek and Roman dead (he omits Jewish causalities) of 240,000 for Cyprus, Egypt and the Cyrenaica. Although one might wonder whether Cretan Jews took part in the revolt, their remains, if repatriated, would be easy to identify: Dio Cassius in the same passage wrote that some captives were forced to fight as gladiators[27] and some were forced to cook their own flesh. Significantly he records that some were sawn in half lengthwise starting at the top of the skull. No skeletons anywhere have been identified with such a signature trauma.

Illness and cures

Scholarship on Lebena has been more interested in the people cured than in the cures.[28] One can hardly be severe: the statues and inscriptions that remain are in stone, a costly material, and privilege the dedicator over other information.[29] It makes it difficult to attempt to extrapolate the illnesses from the cures. Lebena yields less material than one might wish: of the 60 inscriptions in Guardicci, only numbers 8 – 26 belong to the sanctuary.[30] Most of the inscriptions dwell on the medicines and regimen and so few on the illness: severe bronchitis (*IC I. XVII.17*), persistent pain in the right shoulder (*IC I. XVII.18*), and an eye affliction (*IC I.XVII.24*). Dreams, presumably of cures, are mentioned (*IC I. XVII. 26*) but elaboration is lacking.

Aesculapius, however, at least on the basis of Lissos, seems to have served a civic ideology. The 44 inscriptions that Bowsky[31] reports from the Temple to Aesculapius are for movement of men and ideas, official institutions, decrees and treaties, dedications, and miscellaneous. None of the inscriptions are to *Aesculapius medicus*.

For the early Christian church, and perhaps even more importantly during the Reformation, how one died had a bearing on whether one could attain heaven. Yet, not one of the 54 inscriptions from Eleutherna near the church mention cause of death.[32] The pattern doggedly keeps the example set as long ago as Sparta – death in battle is the cause of death most likely to be memorialized on stone.

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26 Horst, van der (2006) 12-27 and also entry on history of Jews in Crete by Nikos Stavroulakis on web-page of Etz Hayim Synagogue (Chania).

27 Gladiator skeletons have been analysed at Ephesus as well as the grave of a wrestler (Novácek, Scheelen and Schulz (2017) 318-338.

28 Bultrighini (1993) is thorough in listing the places in Crete in which statues and inscriptions remain that have to do with healing. Unfortunately *salus* with or without the adjective *publica* can refer to alleviating shortages or suppressing dissent; cp. *IC IV. 272*.

29 *Epigraphica graeca IV. 145* and *IV. 155* would seem to indicate that most dedications would have been on wood and so unlikely to survive.

30 *Inscriptiones creticae I. XVIII* pages 150-178. Inscriptions 1-7, further, are Hellenistic and 28-60 preserve rarely more than a single word. As well, by the end of the third century or beginning of the fourth century, Aesculapius shared his sanctuary with Serapis (*IC I. XVII*. 27). For recent discussion of inscriptions, see Melfi (2007) 155-199.

31 Bowsky (2016) 127-153.

32 Tzifopoulos (2000) 237-259.

Pathologies

Problems mentioned in inscriptions from Lebena do not match up to Bourbou's work at Sfakaki and Eleutherna, and elsewhere.[33] Loss of teeth, loss of enamel, plaque, all tied to diets high in carbohydrates, feature most often.[34] Arthritis, not surprisingly, is found in some skeletons of older individuals, and stress ailments on vertebra are also noted, potentially (there is not universal agreement) a result of corpulence or even diabetes. The sample groups – 151 skeletons from Eleutherna and 33 from Sfakaki – would be more informative if soil conditions had preserved them better. What stands out is that the skeletons from Sfakaki showed neither infectious diseases nor trauma.

The collaboration of Smith and Apostolakou remains known only from published abstracts for the 83rd meeting of the American Association of Physical Anthropologists.[35] Their examination of the Malliotaki Roman cemetery east of Ieraptera and the Roman cemetery in Ayios Nikolaos has recorded the same phenomena as Bourbou has on the other side of the island and, more importantly, their research fills in the gaps between early imperial Sfakaki and late imperial Eleutherna, although perhaps 'filling gaps' is not the best choice of phrase. Anna Moles[36] presented her analysis of Hellenistic and Roman skeletal remains from Knossos. Her observations and conclusions are similar to what is known from Bourbou, and what can be said of Smith and Apostolakou. What it means is that skeletons for the Roman Empire have now been tested from west, east and central Crete and from a large *poleis*, like Knossos and Eleutherna, as well as smaller settlements. That the conclusions of the researchers is similar speaks to how widespread was prosperity during much of the Roman Empire on Crete. The afflictions, like arthritis, were those of people who worked but do not show abuse. The teeth show diseases associated with a varied diet and an ample one; none of the diseases or bone mass or dental problems associated with hunger are present.[37]

The English saying 'comparing apples to oranges' perhaps applies when trying to sync macro-events to micro-realities. There are many known major catastrophes, some system wide, others certainly blanketing the eastern Mediterranean, or ones relevant in cause and effect to Crete. The pathologies that we now track for humanitarian crises, should they be the result of refugee camps, for example, or the causalities from hurricanes or flooding, either immediate to the disaster or in the continuing after-effects of malnourishment, insufficient sanitation, and indifferent medical attention, are not the kind of evidence that can be easily tracked in ancient biometrics. What we have instead might be called a 'Fit Bit snap shot' of the diet and record of traumas largely collected for individuals and then averaged across the small centres

33 Bourbou (2000), (2004), (2005), and (2010).

34 Her results are closely parallel to those of Kiesewetter (2017) on Hierapolis and Teegen for Pergamon, Kyme, and Priene (2017).

35 Smith and Apostolakou (2014) 242-243. I thank them both for what information they have shared with me.

36 Anna Moles (Nov. 2016) "A Preliminary Study of Skeletal Remains from Hellenistic and Late Antique Knossos", first Colloquium on Roman Crete Conference (CoRCC), University of Nottingham.

37 These conclusions come from the paper of Athina Malapani read in absentia on "*Materia Medica* in Roman Crete: Are there similarities with other Mediterranean Regions?", first Colloquium on Roman Crete Conference (CoRCC), University of Nottingham.

in which they lived. Nonetheless the observation of Bourbou (2005: 103) that life expectancy in Hellenistic Khania (42 male; 35 female) was significantly longer than in imperial Sfakaki (35 male; 30 female) is chilling given the general assumption that Roman peace meant universal prosperity. The disjunct between better bones that did not translate into uniformly longer lives is one that needs more research and explanation.

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